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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,605	12/02/2003	Masaki Tokioka	03500.017806	3712

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EXAMINER	
CHIMIAK, EMILY ANN	
ART UNIT	**PAPER NUMBER**
1791	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/724,605	TOKIOKA ET AL.	
	Examiner	Art Unit	
	Emily Chimiak	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/29/2007 has been entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Akiyoshi et al. (see machine translation of JP 2001210258).

Akiyoshi et al. discloses a method of manufacturing an image display apparatus having display devices and an airtight container containing the display devices comprising a step of bonding a substrate (1 or 14) to a frame (1 or 14) for forming an airtight space together with the substrate through a seal bonding material (15) containing a low melting point metal (see [0021], [0030], [0031] and [0033] in the machine translation) wherein the step of bonding includes:

- a step of providing a seal bonding material, wherein in one embodiment this includes a step of flowing low melting point metal out of concave 18 outside at the time of sealing,

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 28-31 are rejected under 35. U.S.C. ~~102(b)~~ 103(a) as being unpatentable over Akiyoshi et al. in view of Vrijssen (US 4710673).

As to claim 28, Akiyoshi et al. is considered to meet claim 1 (see rejection above).

In any event, Vrijssen teaches hermetically sealing the container of an image display apparatus with a mass of low melting point metal applied along the corner of a frame and substrate after the two have been joined in order to apply thermal energy locally along the seam (col. 1 lines 9-15 and col. 2 lines 30-40). It would have been obvious to one of ordinary skill in the art at the time of invention to apply the seal bonding material of Akiyoshi et al. along a corner between the frame and substrate before the step of heating the seal bonding material as taught by Vrijssen because the heat could then be applied locally to the seal. This way, fragile elements of the image display apparatus would not be exposed to heat and the sealing would be more energy efficient.

Vrijssen also teaches adding a flange to member 1 (equated to (14) in Akiyoshi et al. in order to accurately position the window (col. 3 lines 28-37). It is noted that a space between the flange and window will collect molten metal by capillary action, i.e. seal bonding material melted by the heating is introduced between opposing surfaces of the frame and the substrate (see figure 2 and col. 3 line3s 30-40). At any rate, Vrijssen teaches ultrasonically vibrating the seam area in order to produce a stronger weld in one embodiment, which would move the molten metal into the gap (col. 2 lines 53-60). It would have been obvious to one of ordinary skill in the

i.e. providing a seal bonding material along a corner between the frame and the substrate formed by setting the frame and the substrate to abut on each other (see [0050] in the machine translation and figure 4).

- a step of heating the seal bonding material to a temperature equal to or higher than a temperature at which the seal bonding material can perform bonding of the substrate to the frame, wherein in one embodiment this includes a step of introducing seal bonding material between opposing surfaces of the frame and substrate when the low melting point metal flows out of the concave outside (see [0037] and [0050] in the machine translation).

Akiyoshi et al. is considered to meet claim 1 because it is noted that no sequence of steps is required.

As to claim 30, Akiyoshi et al. discloses heating in a vacuum environment (see [0035] in the machine translation).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

art at the time of invention to add a flange to the side-attachment-wall assembly (14), in order to accurately position the frame with respect to the substrate as taught by Vrijssen. It is noted that molten seal bonding material will enter the resultant space between the flange and side-wall-attachment by capillary and/or vibratory action.

As to claim 29, all of the limitations have been addressed except for the step of heating successively along a corner. However, the heating method of Vrijjsen relied on above is performed in this manner.

As to claim 30, Akiyoshi et al. discloses heating in a vacuum environment (see [0035] in the machine translation).

As to claim 31, in one embodiment, Akiyoshi et al. discloses forming a material of high wettability on the sealing location (see [0051] in the machine transition). In this embodiment, the adhesive does not migrate from the high wettability material. However, capillary action and vibratory action, as applied in Akiyoshi et al. as modified by Vrijjsen, is absent. The seal material is considered to flow between the opposing surfaces of the flange and substrate in the method of Akiyoshi et al. as modified by Vrijjsen even when a material of high wettability is coated on the sealing area only.

In any event, a more general embodiment of Akiyoshi et al. does not use a coating of high wettability. When modified by the heating method of Vrijjsen, it is necessary to apply a copper wire (10) to the sealing area in order to heat the seal forming material locally (col. 3 line 35-40). It is noted that copper, according to Akiyoshi et al, is a material of high wettability to the seal bonding material (see [0051] in the machine translation of Akiyoshi et al.).

It would have been obvious to one of ordinary skill in the art at the time of invention to apply a copper wire (a material of high wettability) to the seal area of Akiyoshi et al. as taught by Vrijjsen in order to heat the seal bonding material locally.

Response to Arguments

8. Applicant's arguments filed 10/29/2007 have been fully considered but they are not persuasive.

As to the argument regarding Vrijssen, seal bonding material would enter the opposing surfaces of window 2 and flange 7 in the gap illustrated in Figure 2 due to capillary action and/or vibratory action (see the rejection above).

As to the other arguments, they are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Chimiak whose telephone number is (571)272-6486. The examiner can normally be reached on Monday-Friday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)272-6486. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EAC

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